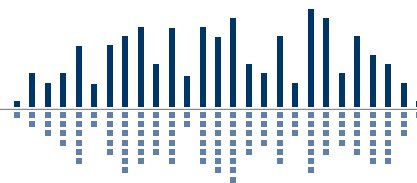


581E Distribution Amplifier (4x4)

User's Guide



The Vision Behind the Sound



Engineered by **Symmetrix**

What Ships in the Box

- A 581E hardware unit.
- A detachable power cord.
- 20 Euro Connectors.
- This User's Guide.

Getting Help

If you have questions beyond the scope of this User's Guide, contact our Customer Support Group in the following ways:

Tel: +1 (425) 778-7728

8:00 am to 4:30 pm

**Monday through Friday,
Pacific Time**

Web: <http://www.SymetrixAudio.com>

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



This Class B Digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations

Cet appareil numérique de la classe B respecte toutes les Exigences du Règlement sur le matériel brouilleur du Canada.

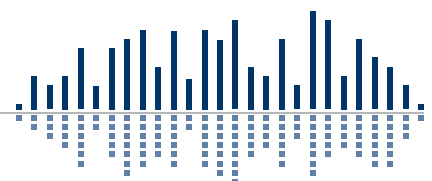
Important Safety Instructions

- 1 Read these instructions.
- 2 Keep these instructions.
- 3 Heed all warnings.
- 4 Follow all instructions.
- 5 Do not use this apparatus near water. This apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.
- 6 Clean only with dry cloth.
- 7 Do not block any ventilation openings. Install only in accordance with the manufacturer's instructions.
- 8 Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9 This apparatus shall be connected to a mains socket outlet with a protective earthing connection. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10 Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11 Only use attachments/accessories specified by the manufacturer.
- 12 Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- 13 Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14 Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug cord is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	
WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE		
AVIS: RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR		
SEE OWNERS MANUAL. VOIR CAHIER D'INSTRUCTIONS. No user serviceable parts inside. Refer servicing to qualified service personnel. Il ne se trouve à l'intérieur aucune pièce pouvant être réparée l'utilisateur. S'adresser à un réparateur compétent.		

- ◆ **The lightning flash** with arrowhead symbol within an equilateral triangle is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons. The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product (i.e. this Quick Start Guide).
- ◆ **CAUTION:** To prevent electric shock, do not use the polarized plug supplied with the unit with any extension cord, receptacle, or other outlet unless the prongs can be fully inserted.
- ◆ **Power Source:** This Symetrix hardware uses a switching power supply that automatically adjusts to the applied voltage. Ensure that your AC mains voltage is somewhere between 100-240 VAC, 50-60 Hz. Use only the power cord and connector specified for the product and your operating locale. A protective ground connection, by way of the grounding conductor in the power cord, is essential for safe operation. The appliance inlet and coupler shall remain readily operable once the apparatus has been installed.
- ◆ **User Serviceable Parts:** There are no user serviceable parts inside this Symetrix product. In case of failure, customers inside the U.S. should refer all servicing to the Symetrix factory. Customers outside the U.S. should refer all servicing to an authorized Symetrix distributor. Distributor contact information is available online at: <http://www.SymetrixAudio.com>.



Introduction

The Symetrix 581E Distribution Amplifier (4x4) is a four-input, sixteen-output distribution amplifier. In a typical configuration the 581E accepts four balanced input signals and distributes each input to four independent outputs. The volume of each of the sixteen outputs may be individually trimmed via its front panel potentiometer. Similarly, the volume of each of the four inputs may be independently controlled. Associated with each input is a four LED level meter to assist the user in setting optimum operating levels. The balanced input stages are designed for high common mode rejection and RF immunity. Output line drivers are stable short-circuit protected and designed around industry standard 5532 type op amps. The 581E operates from an internal power supply built around a low magnetic field toroidal transformer, resulting in a very low noise, high performance product.

The 4x4 architecture of the 581E allows the amplifier to fit the greatest possible number of configurations. Each one input, four output module is independent of the others. Wiring the 581E's inputs to four separate audio sources provides four mono distribution channels with four outputs each. This configuration also accommodates two stereo audio feeds.

Stereo audio can be distributed to eight inputs by strapping the 581E's inputs together in pairs. Left channel audio is wired to inputs #1 and #2, while the right channel connects to inputs #3 and #4.

The 581E distributes a single mono audio source to all 16 outputs when all inputs are strapped together. Regardless of your audio distribution requirements, the Symetrix 581E solves the problem with minimum cost and no wasted outputs.

Fast First Time Setup

Follow these instructions to get your 581E up-and-running as quickly as possible. The intent of this section is fast setup. Refer to later chapters for explanation of the 581E's controls and functions.

- 1 Connect audio inputs and outputs. If you do not know how to do this, forget Fast Setup and skip to the Rear Panel Overview.
- 2 Set INPUT level trim controls straight up (12 o'clock position).
- 3 Set OUT level trim controls at maximum level (clock-wise rotation).
- 4 Plug the 581E into an AC outlet using the IEC-type detachable power cord provided with the unit.
- ❗ **Caution:** Failure to connect the 581E to the proper AC mains voltage may cause fire and/or internal damage.
- ❗ **Warning:** Lethal voltages are present inside the chassis. There are no user serviceable parts inside the chassis. Refer all service to qualified service personnel or to the factory.
- 5 Apply line level audio signal to the input(s). "Line level" means previously amplified audio, i.e. not the output of a microphone or other unamplified audio transducer.
- 6 Turn up the INPUT level pot(s) until the red CLIP LED just barely lights. Then back the level down just a bit until the CLIP LED doesn't come on any more, or only occasionally flashes.
- 7 Now read the rest of this User's Guide.



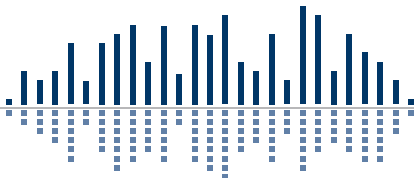
Front Panel	
Item	Description
Input Level	<p>The four input level controls on the 581E are marked INPUT 1, INPUT 2, INPUT 3 and INPUT 4. Each control adjusts it's corresponding input signal over a 30 dB range. With signal applied to input(s) turn up the INPUT level pot(s) until the red CLIP LED just barely lights. Then back the level down just a bit until the CLIP LED doesn't come on any more, or only occasionally flashes. This is the optimum setting and will provide the greatest signal-to-noise ratio without distortion.</p> <p>If your incoming signal positions are unpredictable then we suggest a straight up (12 o'clock) setting. Since the 581E's input has 18 dB of headroom above +4 dBu, this setting should work well under most conditions.</p> <p>If you find that your input signal is very low (the output of a "-10" consumer level device, such as a CD player, for example), turn the INPUT level control clockwise to boost the signal. Conversely, if you're feeding a "+8" broadcast level signal to the 581E then turn the INPUT level control counterclockwise until the proper LED display is achieved.</p>
Input LEDs	Individual LED indicators show input signal levels of -10, 0, +10 and CLIP.
Output Level	<p>The sixteen output level controls on the 581E are marked OUTPUT 1A, OUTPUT 1B, OUTPUT 1C, OUTPUT 1D, OUTPUT 2A, OUTPUT 2B, etc. Use these controls to attenuate the output level over a 20 dB range. Start by turning all controls fully clockwise (unity gain). This will create equal levels from all outputs. If for some reason you wish to reduce the level of certain outputs then turn the appropriate control(s) counterclockwise. Otherwise, for better overall system performance it's best to leave the controls wide open (full clockwise) for the hottest possible output signals.</p>
Power	Red LED indicates power "on".



REAR Panel	
Item	Description
IEC Connector	Connect the proper IEC power cable supplied for your locale. Connect only to appropriate AC power source. Refer to rear panel marking for correct AC source voltage.
Inputs/Outputs	The 581E is fitted with Euroblock style connectors for both inputs and outputs

NOTE:

Detachable Euroblock connectors are designed for use with bare wire.
Do not tin stranded wires before inserting them into the connectors.



Inputs

The four 581E inputs are balanced. Of course, they may be used in unbalanced configurations but for optimum system wide performance (best noise rejection) balanced operation is highly recommended. Use shielded cable for both input and output connections. The wire should always be two-conductor plus shield, even for unbalanced connections.

For balanced input signals:

- ▶ Connect the incoming signal "+" (high) to the "+" INPUT terminal of the 581E.
- ▶ Connect the incoming signal "-" (low) to the "-" INPUT terminal of the 581E.
- ▶ Connect the incoming signal ground (shield) to the ground terminal of the 581E. Repeat for all inputs.
- ▶ For unbalanced input signals, using two-conductor shielded cables:
- ▶ Connect the incoming signal "+" (high) to the "+" INPUT terminal of the 581E. Use the red wire.
- ▶ Connect the incoming signal ground to the "-" INPUT terminal of the 581E. Use the black wire.
- ▶ Connect the cable shield at the ground connection of the 581E only.

If you experience hum or noise, make sure that both the 581E and the device which you are feeding are grounded on the same AC mains circuit. If this is not the source of the noise problem, you must isolate the unbalanced output from the balanced input with an audio transformer or "matchbox."

Wiring the 581E in 2x8 or 1x16 configuration

To connect the 581E as a 2 input, 8 output distribution amplifier proceed as follows:

- ▶ Connect the two incoming signals to INPUT 1 and INPUT 2 as per the instructions above.
- ▶ Connect (4) additional short pieces of #20 or #22 gauge wire as follows:
 - ▶ INPUT 1 "+" to INPUT 3 "+"
 - ▶ INPUT 1 "-" to INPUT 3 "-"
 - ▶ INPUT 2 "+" to INPUT 4 "+"
 - ▶ INPUT 2 "-" to INPUT 4 "-"

To connect the 581E as a 1 input, 16 output distribution amplifier proceed as follows:

- ▶ Connect the single incoming signal to INPUT 1 as per the instructions above.
- ▶ Connect (6) additional short pieces of #20 or #22 gauge wire as follows:
 - ▶ INPUT 1 "+" to INPUT 2 "+"
 - ▶ INPUT 2 "+" to INPUT 3 "+"
 - ▶ INPUT 3 "+" to INPUT 4 "+"
 - ▶ INPUT 1 "-" to INPUT 2 "-"
 - ▶ INPUT 2 "-" to INPUT 3 "-"
 - ▶ INPUT 3 "-" to INPUT 4 "-"

Outputs

The 581E's four outputs are active balanced circuits and should be used to feed balanced audio inputs. Use two-conductor shielded audio cable for all connections.

Feeding balanced inputs:

- ▶ Connect the "+" (high) OUTPUT terminal of the 581E to the "+" (high) of the input of the device which you are feeding.
- ▶ Connect the "-" (low) OUTPUT terminal of the 581E to the "-" (low) of the input of the device which you are feeding.
- ▶ Connect cable shield to the ground of the 581E and the ground connection of the device which you are feeding.

Feeding unbalanced inputs:

WE DON'T RECOMMEND IT. If you must feed an unbalanced input with the 581E, you should isolate the two devices with either an audio transformer or an interface matching device (a "matchbox"). The 581E follows the AES standards for balanced audio circuits. The ground connections of the amplifier are chassis ground.

If you must connect the output of the 581E directly to an unbalanced input, try this procedure. Use two-conductor shielded audio cable.

- ▶ Connect the "+" (high) OUTPUT terminal of the 581E to the "+" (high) of the unbalanced input.
- ▶ Make no connection to the "-" (low) OUTPUT terminal of the 581E.
- ▶ Connect the cable shield at the 581E's ground and at the input connector of the unbalanced input.

The output signal level of the 581E will be 6 dB lower when driving an unbalanced input without a transformer or matching interface device.

If you experience hum or noise, make sure that both the 581E and the device which you are feeding are grounded on the same AC mains circuit. If this is not the source of the noise problem, you must isolate the balanced output from the unbalanced input with an audio transformer or "matchbox."

Matching Levels vs Matching Impedances

In any audio equipment application, the question of “matching” inevitably comes up. Without digging a hole any deeper than absolutely necessary, we offer the following discussion to (hopefully) clarify your understanding of the subject.

Over the years, we have all had impedance matching pounded into our heads. This is important only for vintage audio systems, power amplifiers, and RF. Technically speaking, the reason is power transfer, which reaches a maximum when source and load are matched. Modern audio systems are voltage transmission systems and source and load matching is not only unnecessary, but undesirable as well.

- Vintage audio systems operate at 600 Ohms (or some other impedance value), and must be matched, both at their inputs and at their outputs. Generally speaking, if you are dealing with equipment that uses vacuum tubes, or was designed prior to 1970, you should be concerned about matching. These units were designed when audio systems were based on maximum power transfer, hence the need for input/output matching.
- Power amplifiers are fussy because an abnormally low load impedance generally means a visit to the amp hospital. Thus, it's important to know what the total impedance of the pile of speakers connected to the amplifier really is.
- RF systems are matched because we really are concerned with maximum power transfer and with matching the impedance of the transmission line (keeps nasty things from happening). Video signals (composite, baseband, or otherwise) should be treated like RF.

Some folks seem to believe that balanced/unbalanced lines and impedances are related; or even worse that they are associated with a particular type of connector. Not so. Unbalanced signals are not necessarily high-impedance and balanced signals/lines are not necessarily low-impedance. Similarly, although 1/4 inch jacks are typically used for things like guitars (which are high-impedance and unbalanced), this does not predispose them to only this usage. After all, 1/4 inch jacks are sometimes used for loudspeakers, which are anything but high-impedance. Therefore, the presence of 3-pin XLR connectors should not be construed to mean that the input or output is low-impedance (or high-impedance). The same applies to 1/4 inch jacks.

So, what is really important? Signal level, and (to a much lesser degree), the impedance relation between an output (signal source) and the input that it connects to (signal receiver).

Signal level is very important. Mismatch causes either loss of headroom or loss of signal-to-noise ratio. Thus, microphone inputs should only see signals originating from a microphone, a direct (DI) box, or an output designated microphone-level output. Electrically, this is in the range of approximately -70 to -20 dBm. Line inputs should only see signals in the -10 to +24 dBm/dBu range. Guitars, high-impedance microphones, and many electronic keyboards do not qualify as line-level sources.

The impedance relation between outputs and inputs needs to be considered, but only in the following way - Always make sure that a device's input impedance is higher than the output source impedance of the device that drives it.

Some manufacturers state a relatively high-impedance figure as the output impedance of their equipment. What they really mean is that this is the minimum load impedance that they would like their gear to see. In most cases, seeing a output impedance figure of 10,000 (10K) Ohms or higher from modern equipment that requires power (batteries or AC) is an instance of this type of rating. If so, then the input impedance of the succeeding input must be equal to or greater than the output impedance of the driving device.

Symetrix equipment inputs are designed to bridge the output of whatever device drives the input (i.e. to be greater than 10 times the actual source impedance). Symetrix equipment outputs are designed to drive 600 Ohm or higher loads (600 Ohm loads are an archaic practice that won't go away). You don't need to terminate the output with a 600 Ohm resistor if you aren't driving a 600 Ohm load. (If you don't understand the concept of termination, you probably don't need to anyway.)

The two facts that you need to derive from this discussion are:

- Match signal levels for best headroom and signal-to-noise ratio.
- For audio, impedance matching is only needed for vintage equipment and power amplifier outputs. In all other cases, ensure that your inputs bridge your outputs (meaning the inputs are in the range of 2 to 200 times the output source impedance).

Signal Levels

The 581E is designed around studio/professional line levels: +4 dBu or 1.23 volts RMS. The unit is quiet enough to operate at lower signal levels such as those found in semi-pro or musical instrument (MI) equipment (-10 dBV or 300 millivolts).

I/O Impedances

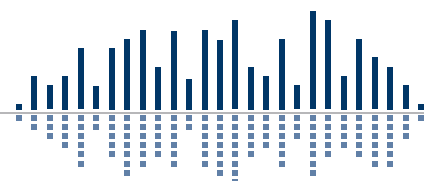
The 581E is designed to interface into almost any recording studio or sound reinforcement application. This includes:

600 Ohm systems where input and output impedances are matched.

Modern bridging systems where inputs bridge and outputs are low source impedances (voltage transmission systems).

The 581E's input impedance is greater than 20k Ohms balanced. The inputs may be driven from any balanced source capable of delivering at least -10 dBV into the aforementioned impedances.

The 581E's output impedance is 600 Ohms balanced, 300 Ohms unbalanced. The output line driver delivers +22 dBm into 600 Ohm balanced loads or +18 dBm into 600 Ohm unbalanced loads.



Input and Output Connections

The illustration to the right shows how to connect the 581E to balanced and unbalanced sources and loads.

To operate the 581E from unbalanced sources, run a 2-conductor shielded cable (that's two conductors plus the shield) from the source to the 581E. At the source, connect the low/minus side to the shield, these connect to the source's ground; connect the high/plus side to the source's signal connection. At the 581E, the high/plus wire connects to pin 2, the low/minus wire connects to pin 3, and the shield (always) connects to pin 1. This is the preferred method as it makes best use of the 581E's balanced input (even though the source is unbalanced). The other alternative shown in the illustration converts the 581E's balanced input into an unbalanced input at the input connector. This works, but is more susceptible to hum and buzz than the preferred method. There is no level difference between either method.

You can drive unbalanced loads with the 581E's outputs by using the XLR connector with pin 3 left open. In an emergency (the show must go on), you can ground pin 3, but if you have the choice... leave it open. If you must ground pin 3, it must be grounded at the 581E, rather than at the other end of the cable. The price, regardless of whether or not pin 3 is grounded is 6 dB less output level. If your system is wired with pin 3 hot, and you are driving an unbalanced load, pin 2 must float.

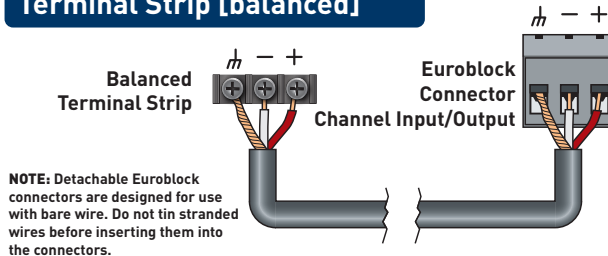
! IMPORTANT NOTICE !

The wiring diagrams on this page are included **for information purposes only**.

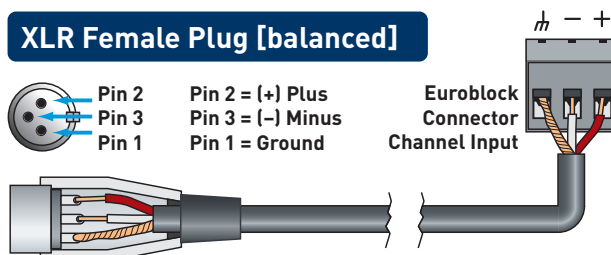
Symetrix can not anticipate exactly what connection is needed at the non-581E end of the cable. **It is the user's responsibility to determine what connection is needed.**

In addition, **Symetrix accepts no responsibility for injury or damage caused by user created wiring.**

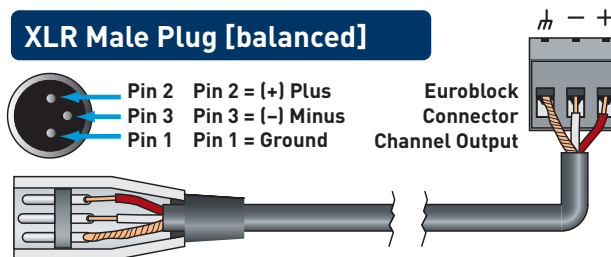
Terminal Strip [balanced]



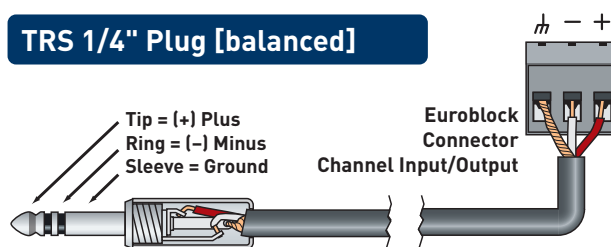
XLR Female Plug [balanced]



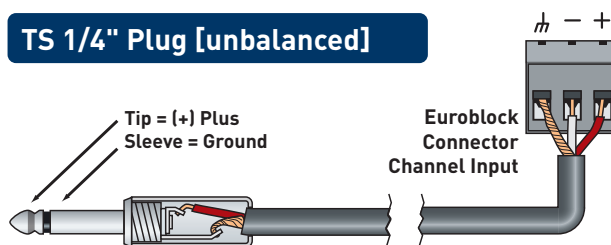
XLR Male Plug [balanced]



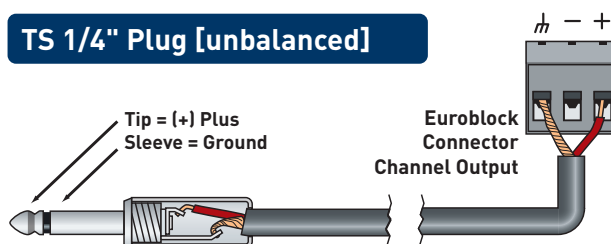
TRS 1/4" Plug [balanced]



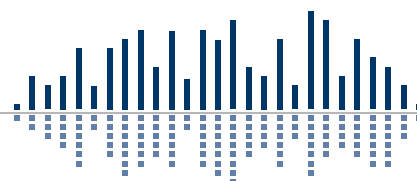
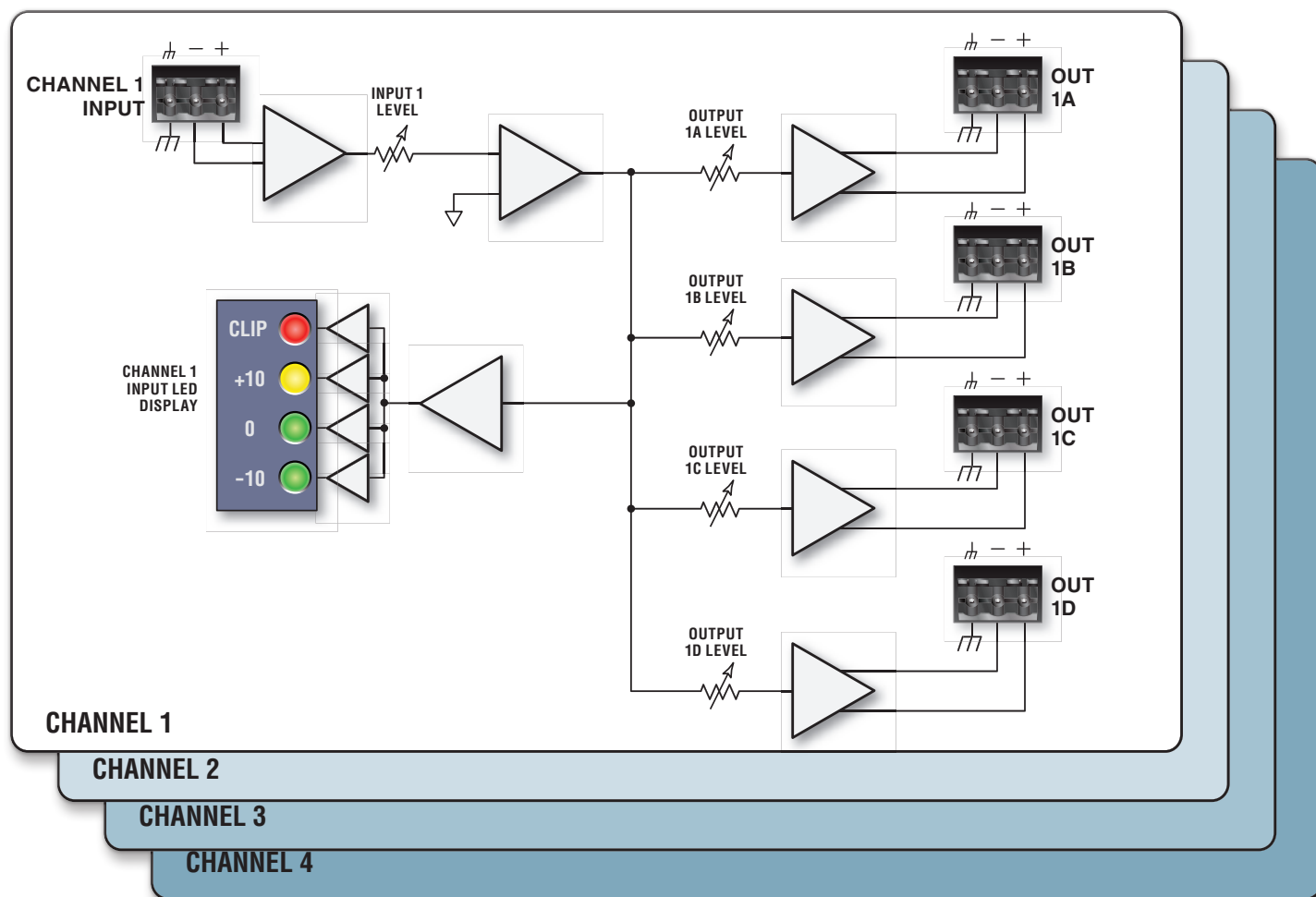
TS 1/4" Plug [unbalanced]



TS 1/4" Plug [unbalanced]



The 581E Block Diagram



No output

Check cables and connections. Are inputs driven by outputs, and outputs driving inputs? Verify cables, source and load by patching input and output connections together, at the unit. Check for AC power presence.

Hum or buzz in output

Check input and output connector wiring. Ground loop: check related system equipment grounding. Are all system components on the same AC ground?

Distortion

Check the level of the input signal on the 581E's LED display(s). Is the CLIP light on all the time? If so, reduce the incoming signal level by turning the INPUT level counterclockwise. Is the incoming signal already distorted? Listen "up stream" from the 581E to make sure you're feeding it a clean signal.

Noise (hiss)

Check input signal levels and input level control settings. The input signal may be too low. If so, boost the incoming signal (if possible). Is the input signal already noisy? Listen "up stream" from the 581E to determine that you are feeding it a clean signal.

No LED display

Is the unit plugged in, and turned on? Is the AC outlet OK?

Notes:

Architects and Engineers Specifications

The audio distribution amplifier shall be a four channel unit with each channel consisting of one electronically balanced input amplifier and four electronically balanced output amplifiers. Associated with each channel shall be a master gain adjustment circuit capable of up to 15 dB of gain or 15 dB of loss for the purpose of optimally matching incoming signal level(s). Also associated with each channel shall be a four LED array for the indication of the signal levels applied to the output drive circuits. The LED's shall be labelled CLIP, +10, 0, and -10 corresponding to internal signal levels of +18 dBu, +10 dBu, 0 dBu, and -10 dBu.

Each output shall be capable of driving a 600 Ohm balanced load to a level of +22 dBm. The maximum output level into a balanced bridging load (20k Ohms) shall be +26 dBu. Each output will offer an individual attenuator with a range of 0 to -20 dB.

Frequency response through the amplifier shall be $\pm 1/2$ dB, measured between 20 Hz and 20 kHz. THD+Noise shall be less than 0.009% measured at unity gain with a bandwidth of 30 kHz. Residual noise will be >100 dB below a +4 dBu input signal when measured with an A-weighting filter.

The unit shall occupy one rack space (1U). The physical dimensions shall be 1.72"H x 19"W x 6"D; 4.45cm H x 43.7cm W x 15.24cm D.

The distribution amplifier shall operate by means of its built-in power supply connected to 115 VAC, nominal, 95-130 VAC, 50-60 Hz; or 230 VAC nominal, 165-255 VAC, 50 Hz. Power consumption shall be 18 watts, maximum. There shall be a rear panel receptacle for an IEC type detachable power cord. The distribution amplifier shall carry the CE mark.

The distribution amplifier shall be a Symetrix, Inc. model 581E Distribution Amplifier (4x4).

Specifications

Input/Output

Maximum Input Level	+26 dBu Balanced
Maximum Output Level	+26 dBu Balanced (20k Ohm load) +22 dBm (600 Ohm load)
Input Impedance	20k Ohms Balanced, 10k Ohms Unbalanced
Output Impedance	200 Ohms Balanced, 100 Ohms Unbalanced

Performance Data

Frequency Response	$\pm 1/2$ dB, 20 Hz - 20 kHz
THD+Noise	<.009%, unity gain input to output, 30 kHz measurement bandwidth
Signal to Noise Ratio	>100 dB, A-weighted, ref. to +4 dBu
Dynamic Range	>125 dB, A-weighted
Common Mode Rejection	>40 dB, 20 Hz - 20 kHz
Input Gain Range	± 15 dB
Output Gain Range	0 to -20 dB

Connections

All Inputs, and Outputs	Euroblock
Power In	IEC 3-prong jack

Physical

Size (hwd)	1.72 x 19 x 6 in., 4.37 x 48.26 x 15.24 cm.
Shipping Weight	8 lbs.

Electrical

Power Requirements	115 VAC nominal, 95-130 VAC, 50-60 Hz 230 VAC nominal, 165-255 VAC, 50 Hz
Power Consumption	18 watts maximum
Note: The maximum operating ambient temperature is 25 degrees C.	

Declaration of Conformity

We, Symetrix Incorporated, 6408 216th St. SW, Mountlake Terrace, Washington, USA, declare under our sole responsibility that the product:

581E Distribution Amplifier

to which this declaration relates, is in conformity with the following standards:

EN 60065

Safety requirements for mains operated electronic and related apparatus for household and similar general use.

EN 50081-1

Electromagnetic compatibility - Generic emission standard

Part 1: Residential, commercial, and light industry.

EN 50082-1

Electromagnetic compatibility - Generic immunity standard

Part 1: Residential, commercial, and light industry.

The technical construction file is maintained at:

Symetrix, Inc.

6408 216th St. SW

Mountlake Terrace, WA, 98043 USA

The authorized representative located within the European Community is:

World Marketing Associates

P.O. Box 100

St. Austell, Cornwall, PL26 6YU, U.K.

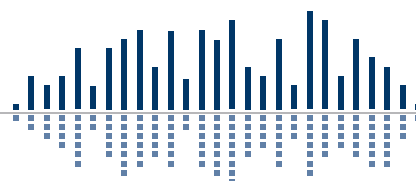
Date of issue: January 1, 2001

Place of issue: Lynnwood, Washington, USA

Authorized signature:



Dane Butcher, President, Symetrix Incorporated.



The Symetrix Limited Warranty

Symetrix, Inc. expressly warrants that the product will be free from defects in material and workmanship for eighteen (18) months from the date the product is shipped from the factory. Symetrix's obligations under this warranty will be limited to repairing or replacing, at Symetrix's option, the part or parts of the product which prove defective in material or workmanship within eighteen (18) months from the date the product is shipped from the factory, provided that the Buyer gives Symetrix prompt notice of any defect or failure and satisfactory proof thereof. Products may be returned by Buyer only after a Return Authorization number (RA) has been obtained from Symetrix. Buyer will prepay all freight charges to return the product to the Symetrix factory. Symetrix reserves the right to inspect any products which may be the subject of any warranty claim before repair or replacement is carried out. Symetrix may, at its option, require proof of the original date of purchase (dated copy of original retail dealer's invoice). Final determination of warranty coverage lies solely with Symetrix. Products repaired under warranty will be returned freight prepaid via United Parcel Service by Symetrix, to any location within the Continental United States. Outside the Continental United States, products will be returned freight collect.

The foregoing warranties are in lieu of all other warranties, whether oral, written, express, implied or statutory. Symetrix, Inc. expressly disclaims any IMPLIED warranties, including fitness for a particular purpose or merchantability. Symetrix's warranty obligation and buyer's remedies hereunder are SOLELY and exclusively as stated herein.

This Symetrix product is designed and manufactured for use in professional and studio audio systems and is not intended for other usage. With respect to products purchased by consumers for personal, family, or household use, **Symetrix expressly disclaims all implied warranties, including but not limited to warranties of merchantability and fitness for a particular purpose.**

This limited warranty, with all terms, conditions and disclaimers set forth herein, shall extend to the original purchaser and anyone who purchases the product within the specified warranty period.

Symetrix does not authorize any third party, including any dealer or sales representative, to assume any liability or make any additional warranties or representation regarding this product information on behalf of Symetrix.

This limited warranty gives the buyer certain rights. You may have additional rights provided by applicable law.

Note: Some Symetrix products contain embedded software and may also be accompanied by control software intended to be run on a personal computer. Said software is specifically excluded from this warranty.

Limitation of Liability

The total liability of Symetrix on any claim, whether in contract, tort (including negligence) or otherwise arising out of, connected with, or resulting from the manufacture, sale, delivery, resale, repair, replacement or use of any product will not exceed the price allocatable to the product or any part thereof which gives rise to the claim. In no event will Symetrix be liable for any incidental or consequential damages including but not limited to damage for loss of revenue, cost of capital, claims of customers for service interruptions or failure to supply, and costs and expenses incurred in connection with labor, overhead, transportation, installation or removal of products, substitute facilities or supply houses.

Servicing Your Symetrix Product

If you have determined that your Symetrix product requires repair services and you live outside of the United States please contact your local Symetrix dealer or distributor for instructions on how to obtain service. If you reside in the U.S. then proceed as follows:

Return Authorization

At the Symetrix factory, Symetrix will perform in-warranty or out-of-warranty service on any product it has manufactured for a period of three (3) years from date of discontinued manufacture.

Before sending anything to Symetrix, please contact our Customer Service Department for a Return Authorization (RA) number. The telephone number is +1 (425) 778-7728. Additionally, support is available via the web site: <http://support.SymetrixAudio.com>.

In-warranty Repairs

To get your Symetrix product repaired under the terms of the warranty:

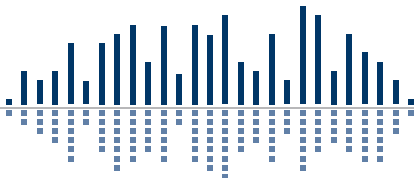
1. Call us for an RA number (have the serial number, shipping and contact information and description of the problem ready).
2. Pack the unit in its original packaging materials.
3. Include your name, address, daytime telephone number, and a brief statement of the problem.
4. Write the RA number on the **outside** of the box.
5. Ship the unit to Symetrix, freight prepaid. We do not accept freight collect shipments.

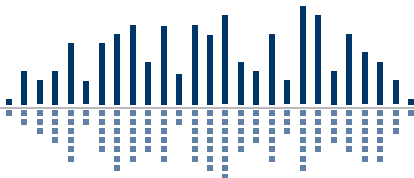
Just do these five things, and repairs made in-warranty will cost you only one way freight charges. We'll pay the return freight.

If you don't have the factory packaging materials, we recommend using an oversize box. Wrap the unit in a plastic bag, surround it with bubble-wrap, and place it in the box surrounded by Styrofoam peanuts. Be sure there is enough clearance in the box to protect the rack ears. We won't return the unit in anything but Symetrix packaging for which we will have to charge you. If the problem is due to operator misuse or error, you will have to pay for both parts and labor. In any event, if there are charges for the repair, you will pay for the return freight. All charges will be COD unless you have made other arrangements (prepaid, Visa or Mastercard).

Out-of-warranty Repairs

If the warranty period has passed, you'll be billed for all necessary parts, labor, packaging materials, and freight charges. Please remember, you must call for an RA number before sending the unit to Symetrix.







The Vision Behind the Sound

Engineered by **Symetrix**

Item No. 53-0007

581E Distribution Amplifier (4x4) [User's Guide](#)

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